| Sl. No. | Project Name | Project Outlay (Rs. in Lakh) |
|---|---|---|
| 21. | Advanced nano-materials and composites relevant to tribological and structural applications | 754.25 |
| 22. | Value added polymeric materials from renewable resources: Lactic acid and lactic acid based polymers | 613.00 |
| 23. | Recombinant approach to produce linolenic acid and docosahexanoic acid (DHA) in sunflower and yeast | 325.80 |
| 24. | A cost effective Simple Office Computing (SofComp) platform to replace PC | 330.00 |
| 25. | A PC based high end 3D visualization platform for computational biology-Darshee | 192.80 |
| 26. | Improved annotation of Plasmodium falciparam through combination of machine learning and experimental methods : Annotation and experimental validation of specific pathways | 625.22 |
| 27. | Oral delivery of insulin | 287.13 |
| 28. | Pharmacological and genomic investigations on *Withania somnifera*: An Indian medicinal plant | 367.00 |
| 29. | Development of Novel Fungicides | 554.20 |
| 30. | Development of next generation peripheral interface technologies: USB 2.0 PHY and 1394B PHY | 529.60 |
| 31. | Biotechnological approaches for improvements of plant species in India with special reference to pulp and paper | 497.30 |
| 32. | Development of fuel cells based on hydrogen | 2351.00 |
| 33. | Development of a 500 KW low cost horizontal axis Wind Turbine | 527.30 |

**Utilization of Data Prepared by National Remote Sensing Agency**

†163. SHRIMATI KUM KUM RAI: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state utilization of data made with regard to exploration of underground water and soil conservation by National Remote Sensing Agency during last three years?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): The details of utilization of data

†Original notice of the question was received in Hindi.

with regard to exploration underground water and soil conservation during the last three years is given below:

**Exploration of ground water:**

The ground water exploration specifically for drinking water applications has been carried out under the Rajiv Gandhi National Drinking Water Mission (RGNDWM), sponsored by the Department of Drinking Water Supply, Ministry of Rural Development, Government of India. Under this project, ground water prospect maps have been prepared on 1:50,000 scale in a phased manner. During phase-1, maps have been prepared for Andhra Pradesh, Chhattisgarh, Kerala, Karnataka, Madhya Pradesh and Rajasthan. Currently under phase-2, mapping has been taken up for Jharkhand, Himachal Pradesh, Orissa and Gujarat. These maps are supplied to the concerned user departments, in the respective states to enable them utilize the same for selection of sites for drilling wells to solve the drinking water problem in the problematic habitats and also for planning recharge structures to improve the sustainability of existing sources. The feedback received from various states has shown that during the last 3 years, more than 65,000 wells have been drilled with more than 85-90% success rate, and more than 3,500 recharge structures have been constructed.

**Soil Conservation:**

Regarding soil conservation, the Natural Resources Management Division, Department of Agriculture & Cooperation, Ministry of Agriculture has been using remote sensing data for evaluating the impact of the implementation of soil conservation measures in treated catchments in Tamil Nadu, Kerala, Maharashtra, Uttaranchal, Haryana and Rajasthan etc. The catchments covering an area of 52 lakh hectares were treated under the River Valley Projects (RVP) and Flood Prone River (FPR) programmes, wherein the remote sensing data based monitoring provides an objective assessment of the impact of soil conservation measures in the catchment areas.

Under the National Watershed Development Programme for Rainfed Agriculture (NWDPRA) of the Ministry of Agriculture, the monitoring and evaluation of watershed treated under the programme is done using remote sensing the GIS. Such monitoring and impact assessment has been carried out for many watersheds distributed in the states of Maharastra, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and Tamil Nadu.

Watershed development programmes in many states use remote sensing data in an operational manner for soil and water conservation. For *e.g.*, the World Bank aided Sujala Watershed Development Programme in Karnataka undertaken by the Watershed Development Department, Government of Karnataka use remote sensing and GIS for monitoring and evaluation of 77 sub watersheds in Kolar, Tunkur, Chitradurga, Dharwad and Haveri. Similar programmes are ongoing in many other States.

Besides the above, there are many user-funded projects which operationally use satellite remote sensing data from NRSA such as the (i) Assessment and monitoring of waterlogging soil salinity in major command areas undertaken by the Central Water Commission (CWC) in Rajasthan, Haryana, Bihar, Jharkhand, Karnataka and Goa: (ii) Integrated Resource Information System for Desert areas of the Department of Land Resources of Ministry of Rural Development; (iii) Identification and reclamation assessment of soidic soils of UP under the World Bank aided project: (iv) Desertification monitoring and assessment using satellite remote sensing the GIS under the Ministry of Environment and Forests.

**Technology in National Remote Sensing Agency**

164. SHRIMATI KUM KUM RAI:Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the details of parameters adopted by various institutions for the transfer of technology in National Remote Sensing Agency;